History

John L. Todd: Canada's first professor of parasitology

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In 1816 John Todd bid farewell to his wife and parents, left Omagh, County Tyrone, Ireland, and, with great expectations, boarded a ship that was to land him weeks later in New York. His high hopes in this land of opportunity were soon dispelled. The streets were not lined with gold, and war with Britain had only recently concluded. Signs saying "No Irishmen or Jews need apply", told the grim story. Nevertheless, Todd persevered and found work, first as a carter and then as a butler in a "gentleman's house". His wife and parents joined him later.

Life for the Irish in New York was far from ideal. They met periodically to consider plans for their welfare. Officials in Toronto Township, near Brampton, were aware of their plight. Part of the township was surveyed in 1819, and some of the land was made available to distressed Irishmen in New York, who could apply for grants through the British Consul. On May 1, 1819, 29 Irishmen set out for Upper Canada, or what was then called "the lone land habited by Indians and wild beasts".

John Todd and his relatives must have known of this generous offer. But it wasn't until a year later that Todd decided to leave "the sidewalks of New York" to settle on one of the bush farms on Lot 14, Concession I, Toronto Township. Pioneering life was grim, but with courage and perseverance he and his wife began to turn the wilderness into arable land. At the same time they raised a family of nine.

The second son, Jacob Hunter Todd, born in 1827, must have inherited some of his father's pioneering spirit, for in 1862 he headed West, via Panama, for Victoria, the gateway to beautiful British Columbia. Hundreds from all over the world flocked there after gold had been discovered in the Fraser Valley. With prospectors, land speculators and others of questionable character — including "the professor", the man who played the piano in the house of ill repute — the population of Barkerville (named after William Barker, who in 1851 had found gold in the Cariboo) swelled.

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Jacob Todd, realizing the people would need food, opened a general store in Barkerville and acquired a share in a mine on Lightning Creek. After 10 years he had amassed a small fortune and in 1874 he returned to Victoria and opened a store and a salmon-canning factory.

However, life was not without its tragedies. "A light of his life" was extinguished when his wife and two children died. However, 7 years later he struck another match and married Rosanna Wigley, one of 13 children.

Infant mortality was high, and Todd's first three children by Rosanna died in infancy. "It is perhaps surprising", his granddaughter wrote later, "in view of these sad experiences that when Rosanna was approaching the end of her fourth pregnancy, Jacob decided to take her for the usual buggy ride into the country. The date was September 10, 1876." When well outside the town, signs of an impending birth became increasingly evident and here, by the side of the road, John Lancelot Todd was born. The loving care of a mother dispelled fear of relatives for his survival. As he grew his capable and devoted mother, who had been a teacher, gave him the equivalent of the education he would normally receive at primary school. By the age of 13 he was accepted into Upper Canada College. Boyhood days at Victoria clearly made a lasting impression on John Lancelot. For years, even after receiving his medical education, he wrote of returning to the beautiful land of his birth with a view to the sea and the mountains. Time and circumstance dictated otherwise.

Progress at Upper Canada College was gratifying. He did well although one master wrote, "he was inclined to be troublesome". His housemaster, Stephen Leacock, with whom he established a life-long friendship, was concerned with his progress in French and German and his lack of concentration. Such shortcomings were offset, however, by his avid interest in literature.

Nearing graduation his thoughts turned, with parental prompting, to a future career. Law and medicine appeared the alternatives. Correspondence suggests that the parents preferred him to study law. He wrote home to say: ". . . in medicine a constant interest is maintained by new diseases appearing and by new ways of treating old ones. So medi-

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cine is always progressing while in law there are few cases (unless one enters politics) where a precedent has not been established." The choice was medicine and McGill University. Later he obviously questioned the choice when he wrote: ". . . I cannot see why people live in Montreal when they can go to Toronto." The course included Greek and Latin as well as science and medicine. His introduction to parasites came in boarding houses. "I never know", he wrote, "whether I will get to sleep before the bugs begin to bite."

Graduating with a BA in 1898 and an MD in 1900, his mother urged him to study at once for his fellowship in the Royal College of Surgeons of London. He was more inclined to spend 2 years in a hospital and wait for something to turn up. Visions of practising medicine in Victoria continued to haunt him. "Don't wait for something to turn up", his mother urged. "Study for a definite purpose and keep on the watch and when anything turns up that may be an advantage to you seize for your purpose but do not wait for it."

Returning to Montreal in the autumn following graduation he became assistant surgical pathologist at the Royal Victoria Hospital under the well known Prof. J. George Adami. The salary was $300 per year. He was soon to realize he said, "how little practical work I really know". Within months an opportunity arose that changed forever the direction of his life. The recently established (1899) Liverpool School of Tropical Medicine had available a scholarship that could be held by a colonial. Excellent references from his professors together with his interest meant that he was off to England in the autumn of 1901.

Although not enamoured with England he was impressed with the cosmopolitan mix of students at Liverpool and the interest in, and support for, research on parasitic diseases in Africa. He began to contemplate joining an expedition. Visions swirled through his head that he could become famous from future discoveries. Then he would return to Victoria and set up a practice near Fort and Douglas streets "not too far from the sea". Hopes brightened on learning that he might accompany Dr. Joseph Everett Dutton to Gambia where the year before Dutton had described *Trypanosoma gambiense*. It is difficult for us, 80 years later and far removed from the scene, to visualize the primitive working conditions and the lack of communications, the distressing illness and mortality from sleeping sickness, and the poverty among the African natives who might receive a shilling a week, (although a few were rich with pounds of gold dust stored in demijohns). "We are playing at a game of blind man's buff", Todd said. Nevertheless Dutton and Todd examined many patients, found trypanosomes in six of them and were increasingly convinced of their association with sleeping sickness. Transmission by tsetse flies was suspected although unproven. They also observed different trypanosomes in mice, horses and other animals.

Meanwhile King Leopold II of Belgium, hearing of the work of the school, invited it to send an expedition to the Belgian Congo, which he controlled. Dutton and Todd were selected. A gala luncheon with Liverpool dignitaries preceded the departure of the 12th expedition on Sept. 3, 1903 for Leopoldville. They planned to stay for 2 years. In summary, they examined hundreds of people for trypanosomes, established a system of quarantine, then turned their attention to relapsing fever, and described the spirochete, the causative agent, and showed that it was transmitted by ticks. Unknown to them Ross and Milne a few months before had associated the spirochete with the disease. Unfortunately both Dutton and Todd contracted the disease and Dutton died. On his return in 1905 Todd received the Order of Leopold II from a grateful king. He was appointed an assistant lecturer at the Liverpool school and in 1906 became director of tropical diseases at the Runcorn laboratory. Anxious to commemorate the name of Dutton he offered to give £1000 to establish a memorial fund if six others would do likewise.

Meanwhile interest in parasitology was stirring at McGill, inspired, I believe, by the one time presence and interest of Sir William Osler, by then professor of medicine at Oxford.

In 1905 Todd was invited to lecture to the Medical Society at Oxford. He stayed with the Oslers. Speculation suggests this may have launched plans for a return to Canada. For in late 1906, Osler, on a visit to Montreal, discussed with Principal Peterson of McGill and Sir William MacDonald, the possibility of organizing a department of medical zoology to consider the whole range of parasitism. On Feb. 3, 1907 Osler wrote to Prof. Robertson of McGill advising of the conversation and suggesting that Todd, because of his work on ticks, would be a suitable candidate:

When in Montreal a few weeks ago I had a chat with Sir William MacDonald and Mr. Peterson on the possibility of organizing, in connection with the Agricultural College, an extensive department of medical zoology in which the whole subject of Parasitism should be considered. Sir William was anxious that I should see you, but I had only part of two days in Montreal. I promised him to get a scheme from Stiles of Washington, who is certainly the leading expert on parasites in the English-speaking world. The Department could be made a most important one and it has such close affiliations with disease that the same man could very well lecture on parasites in the medical school. There would be no lack of candidates for such a place, and there are one or two very good men available, particularly Todd who had done so much good work on the Ticks. I should not be surprised, however, if such a position were thrown open, that Stiles himself might be a candidate. I have asked Stiles to prepare a memorandum which I will forward to you.

Sincerely yours,
Wm. Osler.

A letter from Prof. Adami to Todd in 1907 advised of a possible position, and a later one that he had been appointed associate professor of parasitology beginning in 1908 at a salary of $1000 a year in the department of pathology, bacteriology and parasitology. The appointment was considered prestigious. Principal Peterson referred at some length to it in his report to the Board of Governors for 1906–07:

One of the most important appointments

made in the Medical Faculty during the year was that of Dr. John L. Todd, B.A. (McGill) 1898, M.D. (McGill), 1900, who is to become Associate Professor of Parasitology. The reputation which Dr. Todd has gained throughout Europe by his study of the nature of "Sleeping Sickness" and other cognate diseases is the best guarantee that, in returning to his Alma Mater, he will bear his share in advancing the interests of scientific medicine. If our Medical Faculty is to keep up with the advances which are being made in other schools — and there is none more worthy to be in the very van of progress — it must be put in a position by appointments such as this to increase its already great reputation for research and investigation.

Todd was not forgotten by Liverpool, however, for in 1909 he received the degree of Doctor of Science, *honoris causa*, along with Charles Darwin, Guglielmo Marconi, Lord Roberts, and Lord Balfour. And in 1910 he returned to receive the school's highest honour, the Mary Kingsley Medal.

University life, then as now, had its frustrations. A fire at McGill caused shortage of space. Science buildings were in the course of construction. Work on a new medical building had not begun. Consequently on arrival in Montreal Todd was assigned space at MacDonald College, where, 24 years later, the Institute of Parasitology would be established.

While at McGill he travelled extensively in the United States and Europe. He went West to study swamp fever in horses. During a visit in 1910 to the new, endowed Rockefeller Institute Hospital, Todd was especially impressed with experimental transplants of organs in dogs. "Imagine in the future", he said "a person with heart disease will have his old one taken out and a nice fresh one from a sheep inserted in its place."

In 1911 he was off again to Africa accompanied by Dr. Simeon Burt Wolbach of Harvard University. They found trypanosomes in 1% of 2500 people they examined. They made blood smears from many reptiles, birds and mammals. Among these was a new species of *Leucocytozoon* called *toddi* by Sambon.

Absorbed though he was with his research and teaching of parasites his thoughts in 1909 were turning in other directions too. The beauty and personal qualities of Marjory Clouston, the daughter of Sir Edward Clouston, general manager of the Bank of Montreal, attracted him. His marriage to her in December 1911 affected his life as profoundly as the scholarship to Liverpool — perhaps even more so. Always devoted to his own family and relatives, a similar happy relationship developed with his wife and the children that arrived in ensuing years. Farming and gardening became more and more absorbing at the expense of research in parasitology.

Then came World War I and enlistment. Rather than utilizing his experience in research, his duties as a major became administrative. This appeared to tax his energy, health and interest. In 1919 he wrote: ". . . microbes don't seem to be as important as they once did and again because I haven't the energy I once possessed . . . I get more pleasure from farming at St. Anne than I do from anything — barring the children."

Nevertheless after the war he did grasp an opportunity, under the auspices of the American Red Cross, to lead an expedition to Poland with Dr. Wolbach to study and try to control the devastating outbreak of typhus fever that spread with the advancing Bolshevik troops. Their accomplishments were reported in a paper, "Etiology and Pathology of Typhus". For this, Poland awarded him the Order Polonia Restituto and the Canadian Red Cross elected him a member of its executive. His successful investigations in parasitology appeared insufficient to persuade McGill to provide adequate facilities for research. This and poor health lessened his active interest and he decided in 1924 to resign his position effective in 1925 to devote his time to his talented family. Following retirement he declined an invitation to become secretary of the health section of the League of Nations.

His dream of practising medicine in Victoria was never realized but McGill's foresight in launching parasitology marked it as a centre for expanding research in the discipline. A few years after his retirement

officials at McGill began discussions with the heads of the National Research Council and the Empire Marketing Board concerning the feasibility of establishing at McGill an Institute of Helminthology. These culminated in the creation of the Insitute of Parasitology in 1932. Dr. Todd was, for a time, on the associate committee of the National Research Council which was responsible for supervising the institute.

This brief outline overlooks much that should be included in a detailed chronicle of Dr. Todd's life — an analysis of his conscientious research, experiences in Africa, his kind and philanthropic nature, his family life and social connections.

His advancing years were marred by repeated attacks of asthma and a heart attack from which he recovered. Delightful winter holidays in South Carolina for many years and his fondness for the outdoors undoubtedly helped to restore his health.

At the outbreak of World War II he returned from Europe where he had spent 5 years with his family and tried to make his farm at Senneville self supporting. He had received many honours and had travelled widely. He had worked with, and knew many famous men. He did not make friends easily but he had a few notable ones, John McCrae, William Osler, Charles Sherrington, Max Aiken, among others. Surprisingly he appears to have had little contact with contemporary Canadians, Seymour Hadwen, Edward Arthur Watson, for example, who were expanding boundaries of parasitology.

By 1949 the life of John L. Todd had come full circle. Having concluded a delightful fishing trip on the Gaspé with a friend he decided, against the wishes of his family, to drive home late at night. Nearing Montreal his car took to the ditch and hit a tree. His life ended, as it began, by the side of the road. ■

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